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| **Name:**  Zach Quam |
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| **Pathology Question:**  What are common implant complications? |
| **Report:** In recent decades dental implants have grown in popularity as a preferred treatment option to replace missing or diseased dentition. As such, it is essential for the clinician to develop a knowledge of common implant complications that one may encounter over the course of treatment. Common implant complications can be summarized into 4 broad categories that may arise during or after implant placement. For the purpose of this report the complications will be categorized into biomechanical overload, infection/inflammation, bone and soft tissue space and injuy to anatomical structures.  Biomechanical overload manifests as loosening or fracture of a component of the dental implant. Such biomechanical overload may be a result of poor angulation of the mplant, inadequate posterior support, inadequate bone support as well as parafunctional habits. Loosening can include cement failure or loosening of the prosthesis screw or abutment screw. Furthermore, loosening may be a result of a lack of osteointegration, the integration of bone and implant. This failed osteointegration can be a result of micro motion of the implant that causes a layer of scar tissue to form between bone and implant.  Furthermore, infection or inflammation is another common implant complication. A patients lack of proper oral hygiene can lead to infection of the implant site. In addition, subgingival cement may cause an immediate or delayed inflammation of the tissue via a foreign body reaction. Infection and subgingival cement may may lead to peri-implant disease, which presents with redness and painful inflammation. Peri-implant disease itself can be broken down into peri-implant Mucositis and peri-implantitis. Peri-implant Mucositis can be defined as bleeding on probing and inflammation of tissue around the dental implant while peri-implantitis can be defined as a change in bone level at the implant site. Infection can be treated early through the utilization of antibiotics. Also, subgingival cement can be treated by simply removing the cement. However, both long term infection and inflammation may lead to bone resorption that must be treated via tissue or bone graft.  Additionally, inadequate bone or soft tissue space can be a complication with implant treatment. In preparation for implant placement, it is important to preserve the residual bone and soft tissues for form and esthetics. Esthetic condisderations are particularly important in the anterior. Furthermore, it is important to maintain 1.5mm of space between an implant and adjacent teeth. Similarly, one must maintain 3-4mm of space between imlants. In assessing bone and soft tissue space, one can use Seibert’s classification. A class I classification indicates a buccolingual loss of ridge contour while a class II indicates apicocoronal loss of ridge contour. Additionally, a class III indicates both buccolingual and apicocoronal loss of ridge contour.  What is more, injuries to anatomical structures can occur during surgical implant placement. Consequently, it is important to protect the inferior alveolar canal and the neurovascular bundle within. Additionally, car must be taken not to invade the maxillary sinus or nasal cavity. In more compromised mandibles, mandibular fracture must obviously be avoided. Also, adjacent devitalized teeth that were endodontically treated have been known to have dormant problems that flare up and cause implant pathosis.  As the prevalence of dental implant placement increases along with an aging population, dental implants will become a larger aspect of dentirstry. Consequently, it is paramount the clinicians develop knowledge of these implant complications in order to prevent them and provide their patients with optimum care. |
| **References:** https://journals.lww.com/implantdent/fulltext/2008/06000/Implant\_Surgery\_Complications\_\_Etiology\_and.6.aspx  https://0-www-sciencedirect-com.libus.csd.mu.edu/science/article/pii/S0887217115000967?via%3Dihub  **https://0-pubmed-ncbi-nlm-nih-gov.libus.csd.mu.edu/27647536/**  **https://0-www-sciencedirect-com.libus.csd.mu.edu/science/article/pii/S0300571217300957?via%3Dihub**  **https://dl.uswr.ac.ir/bitstream/Hannan/88889/1/2018%20Periodontology2000%20Volume%201%20June%20%286%29.pdf** |